

\*\*\*Suspended\*\*\*

Trend Study 3-15-96

Study site name: Ogden Canyon.

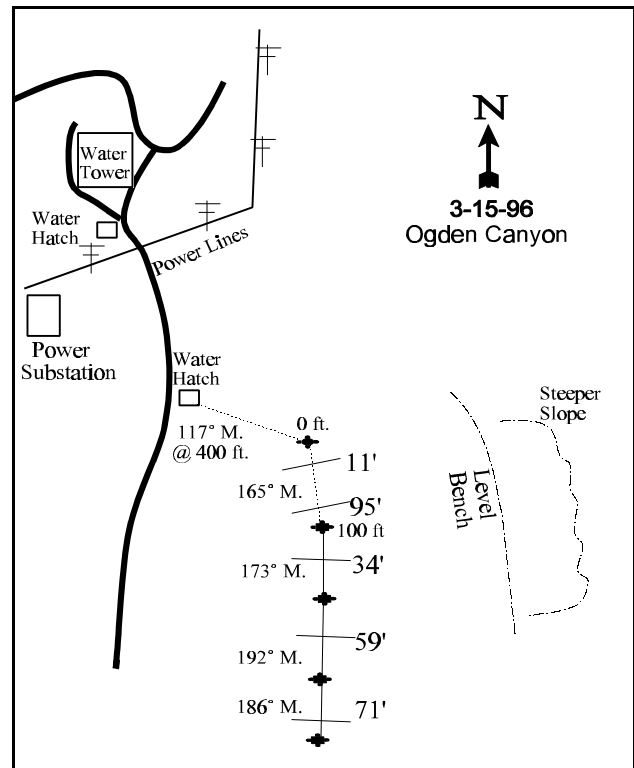
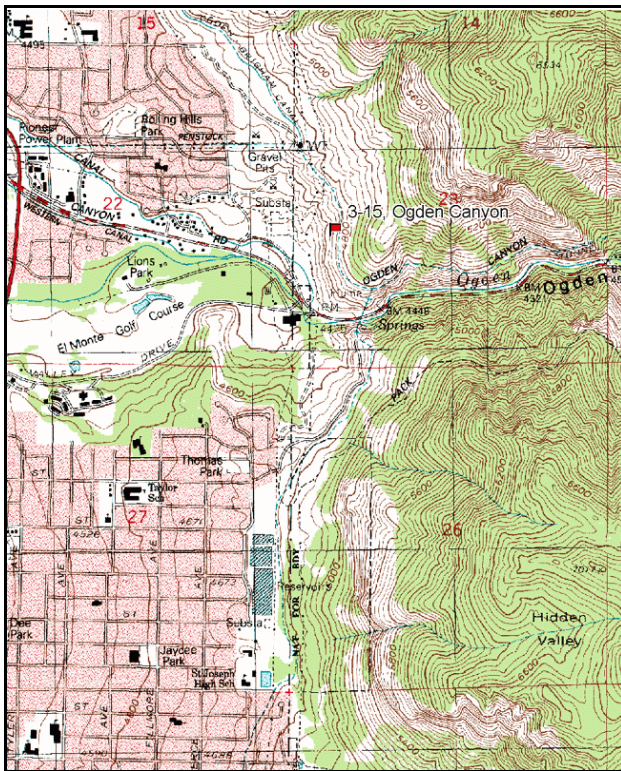
Vegetation type: Rubber Rabbitbrush.

Compass bearing: frequency baseline 165 degrees magnetic.

Frequency belt placement: Line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

LOCATION DESCRIPTION

The transect is located just north of the mouth of Ogden Canyon. From Ogden, drive east on Canyon Road to 1600 East; north on 1600 East to 1350 South; east on 1350 South to Maxfield Drive (1700 E); north on Maxfield to Hislop Dr. and turn right onto Hislop. You should see a water tower east of you on the hillside. Drive past the water tower, under the power lines and stop where there is one water hatch on the west side of the road and then another one on the east side of the road (with a wood top). From the water hatch, the study begins 400 feet southeast (117 degrees magnetic) on the edge of a small bench. Walk to the top of the slope above the patch of oak. The baseline stake is 5 to 10 yards south along the rim. The baseline runs 165 degrees magnetic.



Map Name: Ogden

Diagrammatic Sketch

Township 6N, Range 1W, Section 23

UTM 4655540 N 422410 E

## DISCUSSION

### Trend Study No. 3-15

\*\*\***SUSPENDED** - This site was suspended in 2001 and will be reevaluated in 2006. This site was evaluated by the Project Leader and suspended due to no sign of wildlife use and the lack of important browse on the site. Text and data tables are included from the 1996 report.

The Ogden Canyon transect, like 3-14, is located in the foothills just above major housing, road and water developments on the Wasatch Front. It is just north of the mouth of Ogden Canyon at an elevation of 4,840 feet. The study samples a rubber rabbitbrush/grass range type situated on a narrow level bench surrounded by steeper oak-covered slopes. It is only representative of this bench which is about 100 feet wide and 500 feet long. The steeper slopes to the north are more open with greater amounts of Wyoming big sagebrush. In the past, the area was used moderately heavy by wintering deer and occasionally elk.

The soil is classified as the Kilburn-Francis association. The soil is moderately deep with an estimated effective rooting depth (see methods) of nearly 13 inches. Texture is a sandy loam with a slightly alkaline soil reaction (7.4 pH). Soil temperature, like the Uintah Junction site, is very high averaging over 81°F at a depth of about 15 inches. However, neither phosphorus or potassium are limiting. There is a fair buildup of litter under the vegetation, which helps prevent erosion. According to the USDA Davis-Weber soil survey (1968), the climax vegetation on this soil type and location is 80% perennial grasses, 10% forbs and 10% shrubs. However, annual grasses and weedy annual and perennial forbs dominate the site.

The principal browse species on the site consist of white rubber rabbitbrush and basin big sagebrush. Rabbitbrush currently numbers 700 plants/acre and accounts for 46% of the browse cover, while basin big sagebrush numbers 620 plants/acre and makes up 18% of the shrub cover. The rabbitbrush plants are large, vigorous and lightly hedged. The population appears stable. Basin big sagebrush increased in density between 1990 and 1996 from 266 plants/acre to 620. Comparing the age structure with the previous readings, it appears that the increase in density is primarily due to the much larger sample size used in 1996 giving a more accurate estimate of shrub densities. Use of the sagebrush was light in the past and is currently ;mostly light.

A few tall Utah serviceberry are found on the site. They have been high-lined to the height that deer can reach and now the shrubs average over 10 feet in height with all new growth unavailable. Some of the nearby oaks are tall and have also have been high-lined. Oak is not abundant on the site yet it dominates surrounding areas. The most numerous browse species is broom snakeweed, a low value invader, but it only contributes to 1% of the browse cover. Large clumps of pricklypear cactus are also present under the rabbitbrush.

The herbaceous understory is abundant. However, composition is poor. The grass component is dominated by cheatgrass which accounts for 54% of the grass cover. The next most abundant grass is bulbous bluegrass which makes up an additional 22% of the grass cover. Another undesirable grass found on the site is red three-awn, a warm season perennial increaser. Preferred perennial grasses that exist on the site, but in lower abundance, include bluebunch wheatgrass, Sandberg bluegrass, and sand dropseed. The bluebunch wheatgrass is large and especially valuable for watershed protection and forage.

Forbs are diverse but not particularly abundant. The most abundant perennial forbs include fleabane, Utah sweetvetch, and hairy goldaster.

## 1985 APPARENT TREND ASSESSMENT

As with most of the low elevation foothill winter range along the front, the biggest threat is development, roads and ORV use. If left undisturbed, the soil trend should remain stable. However, the vegetative trend appears to be downward. The preferred browse species are heavily hedged and becoming unavailable to deer. Broom snakeweed and other invaders appear to be increasing. Management options are limited due to land ownership and watershed concerns.

## 1990 TREND ASSESSMENT

The vegetative trend has not been as rapidly downward as thought in 1985. Desirable browse remains limited, but the diversity and frequency are unchanged. There is some reproduction of basin big sagebrush with the plants appearing vigorous. The shrubs are lightly to moderately hedged, except the heavily browsed serviceberry which occur in very low densities. Broom snakeweed declined in density. Prickly-pear cactus remains common. Perennial grasses dominate the understory. There were shifts in forb species composition, most notably with increases in hairy goldaster and Dyers woad, and decreases in other species. There is minimal erosion on the 20% slope of the lake terrace, but the steeper slopes have less vegetation and detectable erosion with a surface covered with rock and pavement.

### TREND ASSESSMENT

soil - stable (3)

browse - slight decline (2)

herbaceous understory - slight decline (2), grasses are fairly stable, but the forbs are mostly decreasing with dyers woad increasing greatly

## 1996 TREND ASSESSMENT

Trend for soil is slightly up. Percent bare ground has declined and is currently at only 1%. Herbaceous vegetation is abundant, well dispersed and limits erosion. Trend for browse appears stable at this time. The density for white rubber rabbitbrush is comparable to 1985 estimates. The sharp decline in 1990 appears questionable due to the general lack of dead rabbitbrush plants (20 plants/acre). There may have been a sampling or identification problem that year. Reproduction of the rabbitbrush is limited but use is light, vigor normal and percent decadence low at 11%. Basin big sagebrush shows an increase in density (up 57%) since 1990. However, this change appears to be the result of the much larger sample used in 1996 giving better population estimates for shrubs. Density of mature plants has remained similar since 1990. Reproduction is adequate yet vigor is poor on 23% of the population. Percent decadence has risen to 19%. The appearance of oak brush in the sample in 1996 is also the result of the larger sample. Overall trend for the browse appears stable. Trend for the herbaceous understory is also stable. Sum of nested frequency for perennial grasses increased slightly, yet the composition appears to be deteriorating further toward annuals and weedy species. The largest increase in sum of nested frequency came from bulbous bluegrass. Sandberg bluegrass and sand dropseed have declined significantly in sum of nested frequency with each reading. Bluebunch wheatgrass has shown an increase in its nested frequency values, but still only contributes to 5% of the grass cover. Sum of nested frequency for perennial forbs has increased, although overall forbs are not abundant as they only contribute to 18% of the herbaceous cover.

### TREND ASSESSMENT

soil - up slightly (4)

browse - stable (3)

herbaceous understory - stable, but dominated by cheatgrass and weedy forbs (3)

HERBACEOUS TRENDS --

Herd unit 03 , Study no: 15

T y p e	Species	Nested Frequency			Quadrat Frequency			Average Cover %
		'85	'90	'96	'85	'90	'96	'96
G	Agropyron spicatum	72	59	77	26	28	27	2.87
G	Aristida purpurea	<sub>b</sub> 91	<sub>a</sub> 55	<sub>a</sub> 27	36	26	13	1.17
G	Bromus japonicus (a)	-	-	11	-	-	4	.07
G	Bromus tectorum (a)	-	-	309	-	-	89	17.21
G	Poa bulbosa	<sub>a</sub> 34	<sub>b</sub> 87	<sub>c</sub> 158	14	35	51	6.95
G	Poa secunda	<sub>b</sub> 120	<sub>a</sub> 50	<sub>a</sub> 47	47	25	19	.85
G	Sporobolus cryptandrus	<sub>b</sub> 111	<sub>ab</sub> 93	<sub>a</sub> 60	48	49	29	2.50
Total for Annual Grasses		0	0	320	0	0	93	17.28
Total for Perennial Grasses		428	344	369	171	163	139	14.36
Total for Grasses		428	344	689	171	163	232	31.64
F	Alyssum alyssoides (a)	-	-	15	-	-	8	.06
F	Allium spp.	<sub>a</sub> 2	<sub>b</sub> 17	<sub>a</sub> -	1	7	-	-
F	Ambrosia psilostachya	<sub>b</sub> 36	<sub>a</sub> -	<sub>a</sub> 3	16	-	3	.19
F	Artemisia ludoviciana	<sub>a</sub> 63	<sub>b</sub> 35	<sub>b</sub> 21	23	15	9	.41
F	Cynoglossum officinale	<sub>a</sub> -	<sub>a</sub> -	<sub>b</sub> 45	-	-	23	.41
F	Erigeron bellidiastm (a)	-	-	37	-	-	16	1.68
F	Erodium cicutarium (a)	<sub>b</sub> 18	<sub>a</sub> -	<sub>b</sub> 28	8	-	9	.76
F	Erigeron spp.	<sub>b</sub> 37	<sub>a</sub> -	<sub>a</sub> -	18	-	-	-
F	Galium aparine (a)	-	-	2	-	-	1	.00
F	Gayophytum ramosissimum (a)	-	-	9	-	-	4	.02
F	Hackelia patens	-	-	2	-	-	1	.00
F	Hedysarum boreale	25	10	22	14	6	9	1.49
F	Heterotheca villosa	<sub>a</sub> -	<sub>c</sub> 20	<sub>b</sub> 10	-	9	5	.98
F	Holosteum umbellatum (a)	-	-	9	-	-	4	.02
F	Isatis tinctoria	<sub>a</sub> 3	<sub>b</sub> 33	<sub>b</sub> 30	1	16	15	.55
F	Lactuca serriola	-	1	-	-	1	-	-
F	Machaeranthera canescens	-	-	6	-	-	3	.01
F	Oenothera caespitosa	2	-	-	1	-	-	-
F	Phlox longifolia	-	-	6	-	-	2	.01
F	Polygonum douglasii (a)	-	-	13	-	-	7	.03
F	Tragopogon dubius	<sub>b</sub> 11	<sub>a</sub> -	<sub>b</sub> 10	5	-	7	.09
F	Unknown forb-perennial	<sub>b</sub> 42	<sub>a</sub> -	<sub>a</sub> 5	16	-	3	.06

T y p e	Species	Nested Frequency			Quadrat Frequency			Average Cover %
		'85	'90	'96	'85	'90	'96	'96
	Total for Annual Forbs	18	0	113	8	0	49	2.59
	Total for Perennial Forbs	221	116	160	95	54	80	4.22
	Total for Forbs	239	116	273	103	54	129	6.81

Values with different subscript letters are significantly different at alpha = 0.10 (annuals excluded)

#### BROWSE TRENDS --

Herd unit 03 , Study no: 15

T y p e	Species	Strip Frequency	Average Cover %
		'96	'96
B	Amelanchier utahensis	1	.63
B	Artemisia tridentata tridentata	24	2.71
B	Celtis reticulata	-	.38
B	Chrysothamnus nauseosus albicaulis	22	6.72
B	Chrysothamnus viscidiflorus viscidiflorus	1	.15
B	Gutierrezia sarothrae	15	.22
B	Opuntia spp.	25	1.66
B	Quercus gambelii	5	2.19
	Total for Browse	93	14.68

#### BASIC COVER --

Herd unit 03 , Study no: 15

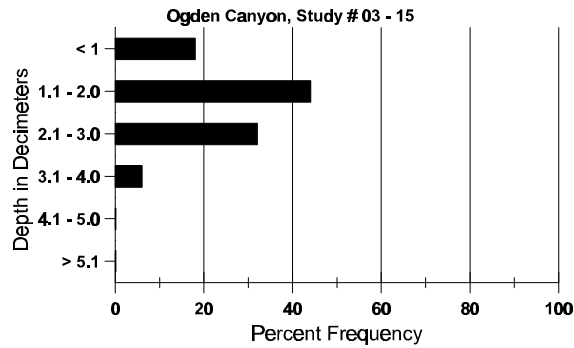
Cover Type	Nested Frequency	Average Cover %		
		'85	'90	'96
Vegetation	377	14.25	5.75	53.93
Rock	158	6.00	9.25	9.73
Pavement	132	2.00	14.50	3.67
Litter	383	54.25	66.00	53.44
Cryptogams	25	0	.25	.33
Bare Ground	75	23.50	4.25	.96

SOIL ANALYSIS DATA --

Herd Unit 03, Study no: 15, Ogden Canyon

Effective rooting depth (in)	Temp °F (depth)	PH	%sand	%silt	%clay	%OM	PPM P	PPM K	dS/m
12.8	81.2 (14.5)	7.4	73.9	12.1	14.0	1.3	12.7	86.4	.6

## Stoniness Index



PELLET GROUP FREQUENCY --

Herd unit 03 , Study no: 15

Type	Quadrat Frequency '96
Rabbit	4
Elk	1
Deer	21

BROWSE CHARACTERISTICS --

Herd unit 03 , Study no: 15

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.			Total
		1	2	3	4	5	6	7	8	9	1	2	3	4					
Amelanchier utahensis																			
M	85	-	-	-	-	-	1	-	-	-	1	-	-	-	66	69	157	1	
	90	-	-	1	-	-	-	-	-	-	1	-	-	-	66	108	197	1	
	96	-	-	-	-	-	-	1	-	-	1	-	-	-	20	128	154	1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>								
'85		00%			100%			00%			+ 0%								
'90		00%			100%			00%			-70%								
'96		00%			00%			00%											
Total Plants/Acre (excluding Dead & Seedlings)												'85	66	Dec:	-				
												'90	66		-				
												'96	20		-				

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches)		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4		Ht.	Cr.	
Artemisia tridentata tridentata																		
S	85	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	3	-	-	-	-	-	-	-	-	3	-	-	-	60			3
Y	85	3	-	-	-	-	-	-	-	-	3	-	-	-	200			3
	90	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	96	11	-	-	-	-	-	-	-	-	11	-	-	-	220			11
M	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	90	-	3	-	-	-	-	-	-	-	3	-	-	-	200	12	14	3
	96	10	3	-	1	-	-	-	-	-	9	-	5	-	280	21	32	14
D	85	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	1	3	1	1	-	-	-	-	-	4	-	2	-	120			6
X	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	160			8
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%			+ 0%							
'90		75%			00%			00%			+57%							
'96		19%			03%			23%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	266	Dec:	25%			
												'90	266		0%			
												'96	620		19%			
Chrysothamnus nauseosus albicaulis																		
Y	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
M	85	10	-	-	-	-	-	-	-	-	10	-	-	-	666	23	31	10
	90	4	-	-	-	-	-	-	-	-	4	-	-	-	266	30	41	4
	96	30	-	-	-	-	-	-	-	-	30	-	-	-	600	31	58	30
D	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	96	3	-	-	1	-	-	-	-	-	4	-	-	-	80			4
X	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%			-30%							
'90		00%			00%			00%			+34%							
'96		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	666	Dec:	0%			
												'90	465		29%			
												'96	700		11%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Chrysothamnus viscidiflorus viscidiflorus																		
M	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	96	1	-	-	-	-	-	-	-	-	1	-	-	-	20	19	38	1
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			00%										
'90		00%			00%			00%										
'96		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	0	Dec:	-			
												'90	0		-			
												'96	20		-			
Gutierrezia sarothrae																		
S	85	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	96	6	-	-	-	-	-	-	-	-	6	-	-	-	120			6
Y	85	9	-	-	-	-	-	-	-	-	9	-	-	-	600			9
	90	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	96	38	-	-	-	-	-	-	-	-	38	-	-	-	760			38
M	85	33	-	-	-	-	-	-	-	-	33	-	-	-	2200	8	6	33
	90	5	-	-	1	-	-	-	-	-	6	-	-	-	400	13	16	6
	96	25	-	-	-	-	-	-	-	-	25	-	-	-	500	9	9	25
D	85	7	-	-	-	-	-	-	-	-	4	-	3	-	466			7
	90	2	-	-	-	-	-	-	-	-	1	-	-	1	133			2
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'85		00%			00%			06%			-80%							
'90		00%			00%			10%			+47%							
'96		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'85	3266	Dec:	14%			
												'90	666		20%			
												'96	1260		0%			



A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.	Total
		1	2	3	4	5	6	7	8	9	1	2	3	4			
Opuntia spp.																	
Y	85	8	-	-	-	-	-	-	-	-	7	-	-	1	533		8 3 2
	90	3	-	-	-	-	-	-	-	-	2	1	-	-	200		
	96	2	-	-	-	-	-	-	-	-	-	2	-	-	-		
M	85	7	1	-	-	-	-	-	-	-	7	-	1	-	533	7 7	8
	90	6	-	-	-	-	-	-	-	-	3	1	2	-	400	5 9	6
	96	55	-	-	1	-	-	-	-	-	56	-	-	-	1120	8 18	56
D	85	8	-	-	-	-	-	-	-	-	5	-	1	2	533		8 9 5
	90	9	-	-	-	-	-	-	-	-	4	-	-	5	600		
	96	5	-	-	-	-	-	-	-	-	-	-	-	5	100		
X	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0 0 2
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	96	-	-	-	-	-	-	-	-	-	-	-	-	-	40		
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
'85		04%			00%			21%			-25%						
'90		00%			00%			39%			+ 5%						
'96		00%			00%			08%									
Total Plants/Acre (excluding Dead & Seedlings)														'85	1599	Dec:	33%
														'90	1200		50%
														'96	1260		8%
Quercus gambelii																	
Y	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0 0 5
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0		
	96	5	-	-	-	-	-	-	-	-	-	5	-	-	-		
M	85	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0
	90	-	-	-	-	-	-	-	-	-	-	-	-	-	0	- -	0
	96	24	-	-	-	-	-	-	-	-	-	24	-	-	-	480	38 44
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>						
'85		00%			00%			00%									
'90		00%			00%			00%									
'96		00%			00%			00%									
Total Plants/Acre (excluding Dead & Seedlings)														'85	0	Dec:	-
														'90	0		-
														'96	580		-